COPY

South Dakota Department of
Water & Natural Resources
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

Review Copy:
Nick Bugosh, Bob Townsend
Barry Parrish.

December 17, 1986

PAGE 4

LAND OWNERSHIP 1
GENERAL 2
P+S 4
SOIL LINER 5
HDPE 6
LEAK DET 7
PAD + POND 8
LAND APPL. 9
WATER QUAL 11
~~SPC~~ SCP 13
RECLAMATION 15
TAILINGS RECL 16
HEAP NEUTRAL 17
STREAM REHAB 18
BONDING 19

Mr. Richard J. Hall
Gilt Edge, Inc.
2005 Ironwood Parkway #222
Coeur d'Alene, ID 83814

RE: Permit Issuance - Mining Permit No. 439

Dear Mr. Hall:

On November 20, 1986, the South Dakota Board of Minerals and Environment conditionally approved your application for a mining permit.

Per the Board's approval, enclosed is a copy of your permit (Number 439) with the conditions attached.

Please be advised that an annual map showing reclamation accomplished and any deviations from the originally approved operating or reclamation plan and the annual fee of $100 will need to be submitted to our office by November 20, 1987.

If you have any questions regarding your permit, please feel free to contact this office.

Sincerely,

Robert Townsend
Program Chief
Exploration and Mining Program
Telephone: (605) 773-4201

Enclosure: Copy of Permit with Conditions Attached; Receipt No. 6616

ANNUAL PAY 20 NOW DUE

Lacana Mining Inc.
2005 Ironwood Parkway
Coeur d'Alene, Idaho 83814
(208) 664-1571

December 13, 1984

Board of Minerals and Environment
c/o Dept. of Water and Natural Resources
Exploration and Mining Program
Joe Foss Building, Fourth Floor
Pierre, South Dakota 57501

Subject: Mining Permit for Gilt Edge, Inc. (a wholly owned subsidiary of Lacana Gold, Inc.)

Gentlemen:

This letter is to serve as written consent for the board of minerals and environment, or its agents, to enter, at their own risk, the permit application area from the date of the application. This authorization will be in effect during the life of the permit. The purpose of this authorization is to assure compliance with SDCL 45-6B or other decisions promulgated under SDCL 45-6B.

Sincerely,

Richard J. Hall
Manager, Special Projects

/ln

RECEIPT Date 12-16- 1984 No. 6616

Received From Lacana Mining Inc

Address Reno, Nevada 89510

One thousand and no/100 Dollars $ 1,000.00

For new [illegible] Mining Permit

([illegible] Inc.)

ACCOUNT			HOW PAID		
AMT. OF ACCOUNT			CASH		
AMT. PAID	1000	00	CHECK		X
BALANCE DUE			MONEY ORDER		

Done

By [illegible]

Department of Water and Natural Resources
Exploration and Mining Program
Joe Foss Building, Fourth Floor
Pierre, South Dakota 57501
Telephone: 605/773-4201

RECEIVED
DEC 17 1984
EXPLORATION AND MINING PROGRAM

APPLICATION FOR MINING/MILLING PERMIT

Pursuant to SDCL 45-6B: Relating to Extraction and Processing of Minerals in Operations Affecting More Than 10 Acres Per Year and Removing Over 25,000 Tons Per Year

---

lame of Operator: Gilt Edge, Inc.

eneral Office Address:

2005 Ironwood Parkway
Coeur d'Alene, Idaho 83814

elephone: 208-664-1571

Local Address:

P. O. Box 485
Deadwood, SD 57732

Telephone: 605-578-2607

ame and Address of Surface Owner:

Various Surface Owners

See Table 1-1 in operating plan narrative

Name and Address of Mineral Owner:

Various Mineral Owners

See Table 1-1 in operating plan narrative

egal Description of Affected Land:

Sec. 5 T4N.R.4E.
Sec. 8 T4N.R.4E.

ounty: Lawrence

Name and Address of Operator's Legal Resident Agent (if out-of-state corporation):

CT Corp.
319 South Coteau St.
Pierre, SD 57501

inerals to be Extracted and, if Applicable, illed:

Gold and Silver

Proposed Starting Date: April 1, 1985

Proposed Completion Date: 1992

ize of Area to be Worked at Any One Time acres): Approximately 153 Acres

Estimated Working Days Per Year:

260 days, 210 leaching

stimated Tonnage to be Mined:

50,000 Tons/Year appr. 5.0 MM Total Tons

7.5 MM Tons Waste

Estimated Duration of Operation (years):

7-10 Years

IR-531-6/82

ource of Legal Right to Enter and Initiate perations:

x) Lease ( ) Letter ( ) US Forest Service Permit

ttach Copy

Source of Legal Right to Dispose of Tailings:

(x) Lease ( ) Letter ( ) US Forest Service Permit

Attach Copy

NSTRUCTIONS (Reference SDCL 45-6B):

his Application Must be Accompanied by:

1. A Narrative Description of Methods of Mining and Milling to be Employed as Per Section 6 (8).
2. A Reclamation Plan Pursuant to Section 7.
3. A Map of the Affected Area Pursuant to Section 10.
4. A Fee of $1,000.00 Pursuant to Section 14, (Units of State and Local Government are Exempt).

efore a Hearing on the Permit May be onducted by the Board of Minerals and nvironment, the Applicant Must Submit the ollowing Materials:

1. Certified Mail Receipts Confirming Mailing of Notice to All Surface Owners and Lessees Pursuant to Section 17.
2. A Copy of the Affidavit of Publication of Notice Pursuant to Section 16.
3. Proof of Filing a Copy of the Application with the Register of Deeds Pursuant to Section 15.
4. A Surety in an Amount to be Determined by the Department Pursuant to Section 20 (Units of State and Local Government Must Submit a Written Guarantee in Lieu of Surety Stating that the Affected Lands Will be Reclaimed in Accordance with the Permit and SDCL 45-6B, Sections 35 through 46).
5. A Copy of Instruments of Consultation From All Surface Landowners, if Different than the Owner of the Minerals Pursuant to Section 12 and 13.

Applicant hereby affirms that the mining and milling will be conducted pursuant to SDCL 45-6B, or any regulations promulgated thereunder; that he will grant access to the Board of Minerals and Environment or its agents to the area under application from the date of the application and during the life of the permit as is necessary to assure compliance with SDCL 45-6B.

Signature: Richard J Hall

Title: Mgr - Special Projects Date: Dec. 14 1984

STATE OF Idaho

COUNTY OF Ada

On this 14 day of December, 19 84, before me personally appeared Richard James Hall who acknowledged himself to be the Mgr, Special Projects (Title) for Lasama Golds, Inc the sole owner of Gilt Edge Inc (Operator) and that he is authorized to execute the Application for Mining/Milling Permit for the purposes contained therein.

Mary Anne Johnson
Notary Public

My Commission Expires: 1-11-86

SEAL

FOR DEPARTMENT USE ONLY

Approved:	Bond Amount:	Permit Number:
20, 1986	$ 672,376.00	439

ture: Lee M. McAllister
man, Board of Minerals & Environment

BRO-000182
ED_002735A_00014447-00005

Lacana Gold Inc.
2005 Ironwood Parkway
Coeur d'Alene, Idaho 83814
(208) 664-1571

See 5, 6 + 8

January 4, 1985

Mr. Bob Townsend
Dept. of Water and Natural Resources
Joe Foss Building
523 East Capital Avenue
Pierre, SD 57501

Re: Gilt Edge, Inc., Mining/Milling Permit Application

Dear Bob:

This letter confirms our conversation of this morning that a portion of the affected land in our permit application is in Sec. 6, T4N, R6E. Would you please amend our permit application to reflect this.

Thank you for bringing this oversight to my attention so promptly.

Regards,

Richard J. Hall
Manager-Special Projects

RJH/cam

CONDITIONS OF PERMIT

TO BE ATTACHED TO AND FORM A PART OF MINING PERMIT NO. 439

(See attached pages containing the conditions of this permit)

DATED THIS 20th DAY OF November, 1986

Lee M. McCahren

SOUTH DAKOTA DEPARTMENT OF WATER AND NATURAL RESOURCES

WNR-516-9/81

TO STATE

Affected Land Ownership

1. Concerning the property ownership of affected lands, two lists of mining claims have been submitted. The list submitted as Table 1-1 with the April 29, 1986 Supplemental Information, and the list submitted as Table 1-1 with the original application do not include all the claims in the area illustrated on the Affected Land Map submitted with the Gilt Edge Project, Comprehensive Reclamation Plan. An amended claim list shall be submitted to include the claim name, Mineral Survey Number, status, mineral ownership and surface ownership for the area addressed in the Comprehensive Reclamation Plan. Table 1-1 shall be resubmitted, with the addition of property descriptions for the following claims:

Claim Name	Use
Erick 1	Corridor
Erick 2	Corridor
Erick 3	Access road
Erick 4	Access road
Anchor	Access road
Maria	Access road
Camico	Access road
Rohebo	Access road
Wheelbarrow	Access road
True Blue	Land application site, corridor

2. The following claims are shown on the Facilities Index Map in the Construction Drawings as not being under Gilt Edge control:

Claim Name	Survey No.	Status	Surface Ownership	Use
Highland Mary	326	Patented	Margory Holbrook	Access road
Joe King (part of Binghamton)	975	Patented	Dale Stroschian	Stream culvert outlet

Pursuant to SDCL 45-6B-12, before conducting a mining operation in the permit area, the applicant shall submit to the Board of Minerals and Environment an instrument of consultation from the surface landowner of the permit area, if different from the owner of the mineral interest.

3. It appears on Figure 7, Attachment 3, near the leach pad and Ruby Waste Dump, that drainage stabilization controls, such as dispersion terrace level spreaders and silt fences, cross over permit boundaries and into adjacent landowners property. The areas in question are east of the South Ruby claim, and north and east of the May Fraction claim. If this indeed the case, the landowners shall be consulted pursuant to SDCL 45-6B-12.

4. The Jen No. 10 unpatented mining claim was staked to cover an open fraction that existed in the area. It is unclear on the Facilities Index Map in the Construction Drawings where this particular fraction within Jen No. 10 is located. A map shall be submitted showing the location of this fraction, and if the fraction lies within the affected area addressed in the Gilt Edge Project, Comprehensive Reclamation Plan, the landowner shall be consulted pursuant to SDCL 45-6B-12.

General

instructional = I

1. Erosion and sedimentation control shall be in place and functional during all phases of construction, operation, and reclamation. Periodic maintenance shall be required to insure control effectiveness.

2. Gilt Edge shall prepare and submit a report to the Department outlining a plan for determining the effects of aerosol drift related to heap spraying. The plan shall include criteria for discontinuing spraying (e.g. wind speed) in the case where excess aerosol drift occurs. The plan shall be subject to review and approval by DWNR.

3. Gilt Edge shall maintain a chemical and petroleum product usage inventory and shall deliver it to DWNR upon request.

4. Prior to the commencement of cyanide leach solution application, Gilt Edge shall have a registered professional engineer certify in writing to DWNR that construction of the leaching system is complete and that all necessary monitoring systems are functional. Prior to the commencement of cyanide leach solution application and after receipt of certification, a ten day period shall be allowed for the Department and Board to inspect the facilities and for the Department to either grant or deny permission in writing to commence cyanide leach solutio application. Permission to grant commencement of cyanide leach solution application shall not be withheld without cause.

5. The operation shall be conducted in compliance with all Lawrence County zoni requirements.

6. Gilt Edge shall establish and maintain a weather monitoring station capable recording wind speed and direction, precipitation, ambient temperature, rel humidity and evaporation. Weather monitoring data shall be submitted to DW quarterly basis.

7. In accord with SDCL 45-6B-42, Gilt Edge shall take precautions to limit access to highwall areas by fencing and posting warning signs. Upon completion of mi highwall areas shall be adequately fenced to prevent hazards to the public.

8. Gilt Edge, in consultation with the Lawrence Conservation District and the Lawrence County Weed Superintendent, shall develop and implement a plan fo noxious weed control.

9. The water quality, air quality, meterological, vegetation, and wildlife mor systems as presented in the permit application or as modified by the Board be followed. Any changes in these monitoring systems shall first be appro the Department of Water and Natural Resources.

10. During the course of mining, should sulfide mineralization be encountered in amounts capable of causing acid generation or potential leaching and neutralization problems, Gilt Edge shall take appropriate actions to ensure that these effects do not occur.

11. A back-up power supply shall be maintained on-site in case a major power failure occurs.

12. The historical remains of the Gilt Edge site shall be plotted on a topographic map at a scale of 1:1200. A series of black-and-white photographs shall be taken to

document the Gilt Edge mill foundation. This work shall be conducted by a qualified person and shall be incorporated into a brief summary report on the mine. Before this work is commenced, Gilt Edge shall notify the State Archeologist's Office.

Plans and Specifications - General

1. The plans and specifications of any facilities that are designed to either prevent environmental contamination or to treat contaminated material shall be submitted and approved by the Department of Water and Natural Resources prior to the construction of any such facility. It is recognized that the plans and specifications submitted during the mining permit application process are approximately 50 percent complete. These plans and specifications which include the basic components to ensure process solution containment shall be completed to the 100 percent constructible stage and submitted to DWNR for final written approval. DWNR shall not unreasonably withhold its final approval of the plans and specifications if they reflect the technical parameters specified in the permit. The final plans and specifications shall reflect any process solution containment modifications required by the Board during the course of the permit hearing. Facilities for which plans and specifications are required include, but may not be limited to:

   a. Land application system
   b. Leach pad
   c. Process ponds
   d. Leach solution application system
   e. Process plant (spill containment)
   f. Cyanide make-up tank or mixing facility
   g. Acid wash and carbon reactivation facilities (containment)
   h. Chlorination facility
   i. Chemical storage areas including petroleum storage tanks and containment
   j. Sewage systems
   k. Water supply system
   l. Powder magazines
   m. Major sedimentation control structures (for berms, ditches, dikes, dams and culverts; include runoff and flow calculations for sizing of structures)

2. Plan maps showing locations of ancillary facilities shall be submitted, along with general plans for these facilities. Facilities for which plan maps and plans are required include, but may not be limited to:

   a. Shop areas/equipment maintenance buildings
   b. Equipment storage areas
   c. Parking lots
   d. Perimeter fencing

3. The Department shall respond to plans and specifications within 30 days of receipt.

4. As-built (record drawings) shall be submitted to DWNR within 60 days of completion of each component of the facility for which plans and specifications are required.

SOIL LINER BEDDING MATERIAL = TAILINGS

Soil Liner

1. Gilt Edge shall submit the following information concerning the soil liner bedding material (tailings):

   a. The available quantity of material suitable for liner construction
   b. Particle size distribution
   c. Percentage of bentonite required to meet specifications
   d. Moisture-density relationship (Atterberg limits)
   e. Strength of the material
   f. Hydraulic conductivity of the material.

2. The minimum thickness of the soil liner for ponds shall be 24 inches compacted in 6 inch lifts to at least 95% standard proctor density. The soil liner for the pads shall include one 6 inch lift incorporating processed bentonite and one 6 inch lift of tailings only, both compacted to at least 95% standard proctor density. Tests to demonstrate the adequacy of the soil liner shall include lab hydraulic conductivity tests to verify a hydraulic conductivity of 1×10^{-7} cm/sec. Processed bentonite in an amount 50% greater than that required to meet the 10^{-7} cm/sec lab hydraulic conductivity shall be used in constructing the pad and pond soil liner.

3. Prior to soil liner emplacement, liner bedding material shall be inspected for homogeneity and to ensure that the appropriate amount of bentonite has been added. These determinations shall be documented in the overall CQA program report.

4. Gilt Edge shall conduct an evaluation of the potential for soil liner failure due to potential "piping" that may occur as the result of the coarse particle nature of the subgrade. Results shall be submitted to DWNR for review prior to construction of the soil liner. non-issue - Steven Markiewicz -

5. An analysis of the acid-base potential of the soil liner material shall be performed. Appropriate measures shall be taken to ensure that acid leachate generation from the soil liner is not possible. not done

6. Tests to determine the capacity of the soil liner material (TAILINGS) to attenuate cyanide, metals and sodium shall be performed with the results submitted to DWNR. not done by Northern

7. An evaluation of the total salts and sodium content of the process solution and their potential effects on the hydraulic conductivity of the soil liner shall be conducted with the results submitted to DWNR prior to construction. was done in letter by Lee Tuve copies sent to Dana Doe copy.

8. The minimum slope of the pond bottoms shall be 2%.

9. Tests to determine the largest allowable aggregate in the liner bedding material to prevent damage of the flexible membrane liner shall be conducted prior to construction. The test shall be conducted using the highest plausible overburden pressure plus a safety factor. The results shall be submitted to DWNR.

10. Gilt Edge shall develop a method to monitor mass movement and settling of the leach pad. Monthly reports of this monitoring program shall be submitted to the Department. Should significant settling or movement of the heap occur, Gilt Edge shall submit a report regarding the behavior of the liner in response to the movement or settling and include mitigative measures to be taken should such an event occur.

Flexible Membrane Liners

B- 1. Liner-effluent compatibility tests shall be conducted to determine the suitability of the proposed flexible membrane liners with the results submitted to DWNR.

B- 2. Hydrostatic testing of both primary and secondary liners shall be conducted at the time of installation to ensure liner integrity. Ponds only

B- 3. Test welds, as described in the specifications, shall be conducted for each welding machine each day prior to commencing liner welding operations, and shall also be conducted whenever a change in the ambient temperature exceeds 15°F.

(LEAK?)

Leachate Detection/Collection System

B-UP/DM 1. The ~~leachate~~ LEAK collection sumps shall be equipped with a 6 inch riser connected directly to the sumps rather than equipped with the 90 degree elbow and 4 inch riser as indicated in the project plans (page 13).

B- 2. Gilt Edge shall establish a monitoring program for all ~~leachate~~ LEAK detection/collection systems and submit a plan outlining the mitigative measures to be taken should excessive leachate be found in the system.

2 procedures manual

Monitoring

demonstrate

20 gallons/acre/day

35 gallons/cell

Pad & Pond P&S Conditions

General

1. The leach pads and process ponds shall be generally constructed as follows:

Pad - top to bottom

a. 24 inches of select material;
b. 100 mil geotextile fabric (if required to secure manufacturer's guarantee);
c. 60 mil HDPE flexible membrane liner;
d. Geonet drainage material;
e. 40 mil HDPE flexible membrane liner;
f. 6 inches tailings mixed with processed bentonite sufficient to reach a permeability of 10^{-7} cm/sec;
g. 6 inches of tailings material.

Ponds

a. 60 mil HDPE flexible membrane liner;
b. Geonet drainage material;
c. 60 mil HDPE flexible membrane liner;
d. 24 inches of tailings mixed with processed bentonite sufficient to reach a permeability of 10^{-7} cm/sec and compacted in 4-6 inch lifts. The 24 inches of tailings and bentonite mixture will be graded approximately 2 feet up the side walls of the ponds. The pond side walls will have a slope of 1.5(H) to 1.0(V).

2. A Construction Quality Assurance (CQA) plan for the pad and ponds shall be submitted to DWNR for review and approval. The CQA plan shall be reviewed in accordance with guidelines set out by the EPA in Construction Quality Assurance for Hazardous Waste Land Disposal Facilities (EPA/530-SW-85-021). The plan should include construction of soil and flexible membrane liners, field tests of the soil and flexible membrane liners, installation and testing of the leachate detection/collection system, construction monitoring and documentation and operational maintenance and inspection procedures.

Land Application

1. Prior to the initiation of each cycle of land application of treated process water, a complete chemical characterization of the process water shall be conducted. The following parameters shall be included in the analysis:

   a. Total Metals Including: Al, As, B, Ba, Be, Cd, Cr, Cu, Fe, Pb, V, Mn, Hg, Mo, Ni, Se, Ag, Zn, Co, Li

   b. Total Cyanide, Free Cyanide, Weak Acid Dissociable Cyanide (WAD)

   c. Sodium Absorption Ratio (SAR)

   d. Electrical Conductivity (EC)

   e. Radon, Uranium, Radium 226, Radium 228, Total Alpha Radiation, Total Gamma Radiation

   f. pH

   g. Major Cations

   h. Major Anions

   i. Cation-Anion Balance

   j. Na, Ca, Mg, K, Cl, SO_4, CO_3, HCO_3, Nitrate, Nitrite, Ammonia,

   k. Total Dissolved Solids (TDS)

   The results of the analysis shall be submitted with the notice of intent to implement land application.

2. Operational monitoring of treated process water to be land applied shall consist of one grab sample per 100,000 gallons of solution. Each grab sample shall be of sufficient volume so that the sample may be split and analyzed for all required operational monitoring parameters. One split sample of each consecutive five grab samples shall be composited and analyzed for the required monitoring parameters. The remaining split sample for all grab samples shall be stored for further individual analysis if analyses of composited samples indicates the presence of a problematic concentration of a given parameter. Sampling parameters shall include the following: Sodium Absorption Ratio, Conductivity, pH, Free Cyanide, WAD Cyanide, Total Cyanide, Total Metals (those found to be above detection limit during initial characterization analysis), Na, Ca, Mg, K, Chloride, Sulfate, Carbonate, Bicarbonate, Nitrate, Ammonia, Major Cations, Major Anions, TDS Cation-Anion Balance, Radioneuclides, Radon, and Total Alpha and Total Gamma radiation (the last 4 only if above background levels).

3. Solution to be land applied shall meet the following limits:

   a. Total Metals (mg/l) - not all-inclusive (see section e)

B - .20	Cr - .05	V - .10	Ag - .05
Cd - .01	Co - .01	Ni - .20	Zn - 2.0
Mo - .01	Cu - .20	Se - .02	Li - .10

b. WAD Cyanide 0.2 mg/l utilizing ASTM Method-D2036-80(C) (weak acid dissociable cyanide)

c. SAR < 10

d. Sulfate 200 mg/l

e. Values for pH, additional total metals (including Al, As, Be, Fe, Hg, Pb, and Mn), electrical conductivity, chloride, bicarbonate, total dissolved solids, ammonia, nitrate, radioneuclides, radiation, and other common ions to be based on initial chemical analysis, site specific variables, and EPA or other standard land application or irrigation siting and criteria documents - values derived must be approved by DWNR.

4. Gilt Edge shall give the Department written notice of intent to implement land application at least one week prior to the initiation of each land application cycle unless extenuating circumstances prevent it. The notice shall include the date on which application will commence, the amount of solution to be treated and land applied, the estimated duration of land application, and analytical results for the first sampling of treated process water (chemical characterization analysis). Following each land application cycle, a written report shall be submitted to the Department and shall include the total amount of solution applied, the total hydraulic loading rate per acre per set, the total metals and cyanide loading rates per acre per set, the duration of the application cycle, all sampling data, and a general discussion of the success of the system.

5. The hydraulic loading rate of land application shall not result in surface runoff.

6. Prior to the initiation of land application, Gilt Edge shall submit a written plan for operational monitoring of the land application area to DWNR and the Department of Game, Fish, and Parks. The plan shall include methods for soil and soil water sampling, vegetation sampling and analysis, soil characteristics and parameters to be monitored, proposed analytical techniques and sampling frequency. The plan shall also include criteria for determining if and when land application should be initiated or discontinued and shall include maximum metals accumulation values. The plan shall be subject to review and approved by DWNR and the Department of Game, Fish, and Parks.

7. The land application system shall be operated in such a manner so as to minimize erosion and physical disturbance of vegetation.

8. Plans and specifications for the land application system shall be submitted to DWNR for review and approval prior to construction. DWNR shall not unreasonably withhold its approval of plans and specifications if they reflect the technical parameters specified in the permit.

9. The land application rating system contained in Attachment No. 2 of the permit application utilizes less than conservative assumptions concerning the land application area. Gilt Edge shall prepare and submit a revised rating system utilizing conservative assumptions and actual values determined by on-site testing. Design of the land application system shall be revised as necessary to ensure that it is consistent with the findings of the revised rating system.

Water Quality Monitoring

1. Gilt Edge Inc. shall submit a yearly surface and groundwater characterization report beginning the year a mine permit is granted. This report shall include, but is not limited to all chemical, discharge, and water level data gathered and a summary and analysis of this data.

2. Gilt Edge shall submit an operational groundwater and surface water monitoring plan including, at a minimum, ten groundwater monitoring stations and six surface water monitoring stations. The plan shall include the parameters to be monitored and frequency of monitoring. The monitoring plan shall be subject to DWNR review and approval prior to construction. The operational monitoring plan shall be continued until final bond release.

3. Gilt Edge shall measure water levels in all groundwater wells quarterly. Shallow well water level measurements shall be done in conjunction with surface water gauging and sampling.

4. Gilt Edge shall submit a land application site monitoring program including, but not limited to, monitoring methodology, number of monitoring stations, sampling parameters, and sampling frequency. The monitoring program shall be subject to DWNR review and approval prior to the commencement of construction of the land application system.

5. Requests to refine or modify water quality monitoring parameters or procedures must be accompanied by a rationale for the refinements and must be approved in writing by the Department.

6. Surface water, ground water, and land application monitoring sites shall be sampled once for Uranium, Radon, Radium 226, Radium 228, Total Alpha Radiation, and Total Gamma Radiation prior to operation to determine their presence and background concentrations. Should the chemical characterization of the treated process water indicate above background concentrations of these parameters, they shall be included in the operational surface and ground water sampling programs. Results of this sampling and analysis shall be submitted to DWNR.

7. All surface and groundwater sampling data sheets shall be submitted to DWNR on a quarterly basis or as dictated by monitoring frequency.

8. All chemical analysis required for water quality monitoring shall be conducted by an EPA certified lab.

9. All water quality sample collection, preservation, and holding times shall be in accord with established QA/QC procedures. A QA/QC plan outlining the above shall be submitted to DWNR.

Table 1

Parameters for Baseline Water Quality Monitoring

Required	Recommended
pH	Fecal coliform
Conductivity	Dissolved oxygen
Total suspended solids (surface water)	Total solids
Total dissolved solids	Ba
Turbidity (NTU)	Fluoride
Hardness (Calcium Carbonate)	
Bicarbonate	
Sulfate	
Alkalinity	
Nitrate	
Nitrite	
N, total Kjeldahl	
N, ammonia	
Phosphorus, total	
Cyanide, total	
Cyanide, free	
Cyanide, WAD	
Chloride	
Ca	
Mg	
Na	
K	
Total metals including:	
Ag	
As	
Cd	
Cr	
Cu	
Ni	
Pb	
Zn	
Hg	
Al	
Se	
Fe	
Mn	
Sb	
Mo	
B	
Co	
V	
Li	
Be	

Spill Contingency Plan

1. The definition of "spill" contained in Attachment No. 11 of the permit application entitled Modifications to Hazardous Materials Spill Contingency Plan, page 5, shall be as follows: Any discharge of hazardous material, "special waste", or oil into or upon waters of the State of South Dakota or to a location which threatens the public health, environment, or waters of the State.

2. There shall not be any loss or release of cyanide or any other hazardous material, "special waste", oil, or toxic element associated with the gold recovery process to the surface environment outside the project boundary or to any surface or subsurface waters of the State.

3. No distinction shall be made by Gilt Edge as to the major or minor nature of a spill. All spills shall be treated equally and corrective actions shall continue until the spill material is at or below a concentration equivalent to background concentration.

4. Any evidence indicating that cyanide or any hazardous material, special waste, oil, or toxic element associated with the gold recovery process is being or has been released to the environment, or evidence indicating possible structural failure of the leach pads, process ponds, or processing facility shall be reported to the Department of Water and Natural Resources within 24 hours at one of the following numbers: (605) 773-3231, (605) 773-3296, (605) 773-4201.

5. Neutralizing chemicals shall be stored on-site in quantities sufficient to neutralize the maximum amount of cyanide that may occur in the processing system at any one time.

6. Gilt Edge shall identify all access routes to be used to transport any hazardous material, special waste, or oil to the site and shall acquire any necessary approvals for use of such routes from the appropriate agencies.

7. Gilt Edge shall submit information concerning the possible negative impacts of neutralizing cyanide utilizing alkaline chlorination and shall provide an explanation of how these potential negative impacts will be mitigated if they occur.

8. Spill response equipment and supply inventories shall be maintained by Gilt Edge with copies submitted to DWNR on request.

9. Gilt Edge shall prepare an inventory of potential points of containment and shall prepare and submit a map depicting them prior to operation.

10. Gilt Edge shall consult Lawrence County Civil Defense officials to determine how and if they want to be involved in emergency response actions.

11. Gilt Edge shall submit a completed spill report form to DWNR within 72 hours of the spill event. In addition to the information included in the form as outlin on pages 19 and 20 of Attachment No. 11 of the permit application, the followin shall also be included:

Form comple

   a. The title of the person reporting the incident;
   b. Containment measures taken;
   c. Treatment measures undertaken;
   d. Recovery measures taken;

e. Proposed further mitigation if required;
f. Monitoring and sampling results;
g. Location for disposal of removed contaminants;
h. Photographic documentation.

Written progress reports shall be submitted every fifteen days after the initial report, until corrective action is complete.

12. The Gilt Edge Spill Contingency Plan shall in no way limit the Boards enforcement power as outlined in SDCL 45-6B (in specific reference to closure criteria).

13. Plans and specifications for petroleum product storage tank installation and containment shall be submitted to DWNR for review and approval prior to construction. Containment shall include any diking necessary to prevent overland flow and lining systems and recovery systems to prevent infiltration and groundwater contamination. Underground storage tanks and lines shall meet RCRA Subtitle I Interim Standards.

14. Plans and specifications for chemical storage area containment shall be submitted to DWNR for review and approval prior to construction.

B91101BT.SM

Reclamation

1. Any old underground workings intercepted by mining activities shall be covered or otherwise sealed off during the course of reclamation activities.

2. Available topsoil or other soil material suitable for use as a plant growing medium shall be stripped and stockpiled for use in reclamation. Topsoil stockpiles shall be stabilized to prevent wind and water erosion.

3. Areas to be revegetated shall be topdressed, topsoiled, fertilized and mulched as necessary to establish and maintain a long lasting vegetative cover that is capable of self regeneration.

4. All accessible areas of the open pits and other affected land capable of supporting vegetation shall be revegetated.

5. During the course of operations, Gilt Edge shall establish reclamation test plots utilizing the proposed foundation growth medium, topdressing, fertilizing, mulching, and seeding specifications found in the Gilt Edge Project Comprehensive Reclamation Plan. Test plots shall be located on the complete range of slopes expected to be present on affected lands to be reclaimed and revegetated following mining and processing operations. Results of the test plot studies shall be submitted to DWNR, the Department of Game, Fish, and Parks and the Lawrence Conservation District.

6. Prior to final closure and bond release, Gilt Edge shall maintain sufficient access to reclaimed areas to allow for any necessary reclamation maintenance required. Access roads that are not necessary for future use shall be reclaimed upon determination of the success of reclamation of all other affected and reclaimed areas.

7. A revised post reclamation map shall be submitted pursuant to SDCL 45-6B-7-(8). The map submitted April 29, 1986, in Supplement 7 is inconsistent with the Gilt Edge Project, Comprehensive Reclamation Plan. The following changes shall be included:

   a. The Leach Pad Access Road shall be outlined and the proposed final land use given.

O.K.

RECLAMATION

1. RIP 6" TO 12" OR 6" FOUNDATION GROWTH MEDIUM
2. 3" TOPSOIL
3. FERTILIZER
4. MULCH (OPTIONAL)
5. SEEDING (BROADCAST) 38 Lb/ac.

Tailings Reclamation

1. Gilt Edge shall, following removal of the existing mine tailings, reclaim the area which they presently occupy in accord with the Gilt Edge Project Comprehensive Reclamation Plan. The reclaimed area shall be treated as necessary to prevent further surface and groundwater contamination.

2. If any of the existing tailings are not removed, they shall be graded to approximate existing slopes, stabilized, revegetated and treated as necessary to prevent further surface and groundwater contamination.

3. Any tailings removed and utilized elsewhere in the project shall be treated as necessary to prevent surface and groundwater contamination.

TAILINGS PILE

6" WASTE ROCK (GROWTH MEDIUM)

TOPSOIL (TOPDRESSING)

PLANT (SEED) GRASSES, FORBS AND SCHRUBS

Drinking water std near .15 mg/L WAD

Heap Neutralization

1. Following cessation of leaching, the spent ore of the heap shall be neutralized such that the heap contains less than 0.2 mg/L weak acid dissociable cyanide (ASTM Method-D2036-80(C)) cyanide and contains acceptable levels of other parameters (as listed below). Following the neutralization cycle, effluent from the heap shall be chemically characterized by analyzing for the following parameters:

   a. Total Metals Including: Al, As, B, Be, Ba, Cd, Cr, Fe, Pb, V, Mn, Hg, Mo, Ni, Se, Si, Ag, Zn, Co, Li,

   b. Total Cyanide, Free Cyanide, WAD Cyanide

   c. Free Chlorine

   d. pH

   e. Radon, Uranium, Radium 226, Radium 228, Total Alpha Radiation, Total Gamma Radiation

   f. Major Cations

   g. Major Anions

   h. Cation-Anion Balance

   i. Na, Ca, Ng, K, Cl, SO_4, CO_3, HCO_3, NO_3, NH_4

   j. Total Dissolved Solids (TDS)

   Effluent samples from the heap shall be collected on a quarterly basis for 2 consecutive years and analyzed for any parameters occurring above detection limits during the initial effluent chemical characterization. Should monitoring indicate the presence of cyanide or unacceptable levels of any other parameter, Gilt Edge shall take appropriate measures to reduce the levels to acceptable values. For purposes of heap neutralization, acceptable values shall be defined as the concentration or level of a given parameter sufficient to meet EPA Drinking Water Standards or Surface Water Quality Standards for potential receiving streams in the area, whichever is more stringent. In the case where a given parameter is not included in either the EPA Drinking Water Standards or Surface Water Quality Standards of if these standards cannot feasibly be met for a given parameter, acceptable values shall be determined by utilizing best professional judgement based on existing criteria documents and approved by DWNR. All effluent monitoring data shall be submitted to DWNR.

17

Stream Rehabilitation

1. Willow cuttings shall be planted at a rate of one clump of five willow cuttings per fifteen lineal feet to provide for bank stabilization and wildlife habitat on the rehabilitated stream channel.

Bond Conditions

1. Gilt Edge shall submit a reclamation surety in the amount of $672,376 prior to commencement of operations.

2. Gilt Edge shall earmark $50,000 of the reclamation bond for open pit landshaping purposes as described in the reclamation plan. Prior to commencing landshaping activities, the appropriate agencies (Game, Fish and Parks, Soil Conservation Service and DWNR) shall be consulted by Gilt Edge to determine the extent and specifics of the landshaping activities. In the event that the cost of the landshaping is less than $50,000, the remaining funds shall be used to establish wildlife habitat in the open pit.